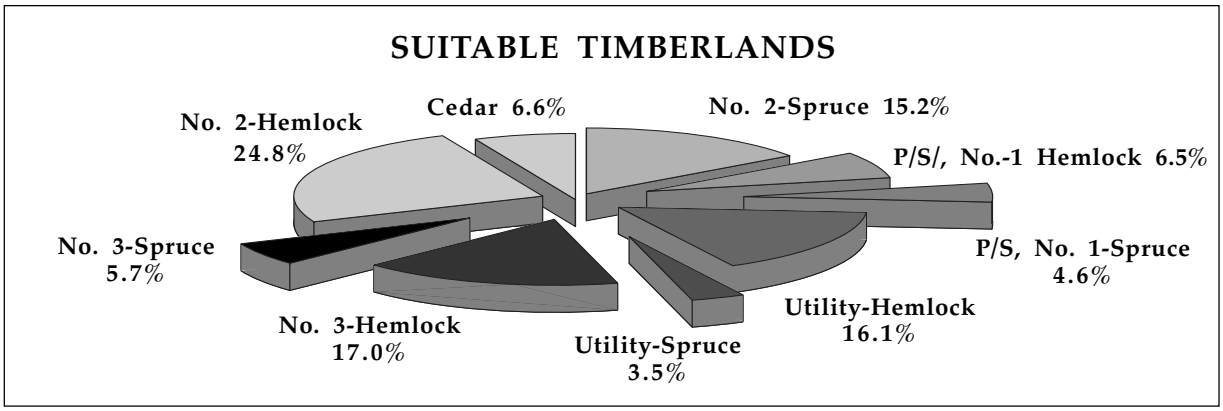
THE TIMBER RESOURCE

Southeast Alaska is the most densely forested area in the state of Alaska and contains a forest inventory of some 6.5 million acres (all ownerships and land classifications). Timber stands average 23-25 thousand board feet per acre (23-25 MBF) and range from 8 MBF to over 100 MBF per acre. In the mid-80s, total net sawtimber was estimated at 175 billion board feet, consisting of 58 percent western hemlock and 30 percent spruce with the balance in cedar and other minor species. The vast majority of the forest in this region is located in the Tongass National Forest and administered by the United States Forest Service. Figure 1 illustrates the percentage breakdown of logs by grade and species for the commercial forest lands of the Tongass. It is important to note that roughly 45 percent of the timber volume consists of the lower grade #3 and utility logs. Historically, the region's pulp mills have provided an outlet for this material. As discussed later, the future of the industry rests on the ability to economically process or otherwise dispose of this component of the wood supply.

Figure 1. Tongass Log Grade Composition



Characteristics of Local Species

The coastal forests of Alaska extend from shoreline to elevations of 2,000 - 3,000 feet and range from the Southeast Alaska panhandle to Kodiak Island. Sitka spruce and western hemlock dominate the forests of coastal Alaska, especially in the deeper, well-drained sites of the river flood plains and lower slopes. Mountain hemlock dominates the upper slopes, extending to elevations above all other species (up to 3,500 feet). The two cedars are found in association with Sitka spruce and western hemlock on the lower slopes. Western red cedar attains its best growth below elevations of 500 feet while Alaska cedar reaches its best development potential between 500 and 1,200 feet in elevation. Western red cedar is not found beyond Frederick Sound, whereas, Alaska cedar extends as far westward as Prince William Sound. The two cedars seldom occur as pure stands, except on very wet soils where competing species cannot survive.

Although virtually any wood can be forced to accommodate a particular use, certain species are superior in certain applications. The key to exploiting any species-specific advantages in the region is to link the unique properties of the wood resource to their highest and best use. The market rewards a successful match. For example, construction contractors will pay more per unit for structural lumber of high strength while woodworkers will pay more for wood that is easy to machine. It is the properties of a material that drive its market value. The unique properties of the tree species native to Southeast Alaska are summarized in Tables 1 and 2. More detailed information on individual tree species can be found in Appendix A.

Table 1. Unique Properties and Potential Products of Alaskan Species

	Properties	Products
Western Hemlock	takes paint and varnish well moderately hard moderate strength moderately light weight takes glue well very wet low decay resistance	framing lumber posts and beams laminated beams plywood pulping molding trim
Sitka Spruce	high strength to weight ratio takes glue well takes paint and varnish well moderately soft exceptionally long fibers/high density good resonance qualities "clear, straight grain" moderately light weight	airplanes veneers boat building millwork pulping piano sounding boards/guitar tops light framing ladders/scaffolding
Western Red Cedar	dimensional stability high resistance to decay takes glue well takes paint and varnish well low thermal conductivity very light weight	siding sheathing and subflooring shingles decking poles furniture poles and posts misc. outdoor uses
Alaska Cedar	extreme durability resistance to acid very workable uniform texture fire resistant strong odor dimensional stability very easy to kiln dry low nail-holding capacity heavy	boat building carving window frames storage tanks canoes and canoe paddles bridge and dock decking doors finish work
Red Alder	uniform texture moderately strong moderately lightweight excellent for machining takes glue well takes paint and varnish well	fine furniture cabinets pulpwood
Black Cottonwood	light weight uniform texture soft moderately weak takes nails without splitting low nail-holding capacity	plywood core boxes and crates pulpwood excelsior fuel

Table 2. Relative Working Properties

	Machining	Resistance to Splitting in Nailing and Screwing	Nail and Screw Holding Ability	Gluing
Western Hemlock	★★	★★★	★★★	★★★
Sitka Spruce	★★★	★★★★	★★	★★★★
Alaska-Cedar	★★★★	★★★★	★★	★★
Western Red Cedar	★★★	★★★	★	★★★★
Western Alder	★★★★	★★★	★★★	★★★★
Black Cottonwood	★★	★★★★	★	★★★★
Douglas Fir	★★	★★★	★★★	★★★
Ponderosa Pine	★★★	★★★★	★★	★★★
White Spruce	★★	★★★★	★★	★★★
Redwood	★★	★★★★	★★	★★★★
Paper Birch	★★★★	★★	★★★	★★
Port-Orford Cedar	★★★★	★★★★	★★	★★

KEY:

Excellent	★★★★
Very Good	★★★
Good	★★
Fair	★